CLAIMS

What is claimed is:

1. A heat exchanger fin for a vehicle, comprising:

a plurality of louvers spaced apart, the spacing of adjacent louvers defining a gap therebetween, at least one of the plurality of louvers being a vortex generator louver provided with at least one mini-vortex generator,

the mini-vortex generator being a protuberance extending from an outer edge of the vortex generator louver, the mini-vortex generator generating a pair of counter-rotating vortices in a fluid as the fluid encounters the mini-vortex generator.

- 2. The heat exchanger fin of claim 1, wherein the proportion of vortex generator louvers to non-vortex generator louvers is between about 20% to 50%.
- 3. The heat exchanger fin of claim 1, wherein the mini-vortex generator louver is positioned towards the front of the fin facing the incoming fluid.
- 4. The heat exchanger fin of claim 1, wherein the vortex generator louver includes two or more mini-vortex generators spaced apart by about 1 mm.

- 5. The heat exchanger fin of claim 1, wherein the protuberance is inclined at an angle relative to a planar portion of the vortex generator louver.
- 6. The heat exchanger fin of claim 1, wherein the angle is between about 30° and 45°.
- 7. The heat exchanger fin of claim 1, wherein the protuberance has a triangular shape with a base and a length.
- 8. The heat exchanger fin of claim 1, wherein the width of the base and the length are about equal.
- 9. The heat exchanger fin of claim 8, wherein the width of the base and the length are less than about 1mm.
- 10. The heat exchanger fin of claim 9, wherein the width of the base and the length are about 0.4 mm.
- 11. The heat exchanger fin of claim 1, wherein the length of the louvers is between about 6 mm to 10 mm.
- 12. The heat exchanger fin of claim 1, wherein the width of the louvers is between about 0.8 mm to 1.5 mm.